

An Aid in Determining the Territorial Sea Baseline for Marine Cadastre using Satellite-Derived Bathymetry

Kelvin Kang Wee Tang, Mohd Razali Mahmud (Malaysia), Alhaji Hussaini and Auwal Garba Abubakar (Nigeria)

Key words: Hydrography; Remote sensing; Baseline Delineation; Territorial Sea Baseline; Marine Cadastre

SUMMARY

In Malaysia, the marine jurisdiction and administrative power over its marine environment is split between the federal government and local coastal states' government. According to Territorial Sea Act 2012 (Act 750), three nautical miles from the low water line of the ordinary spring tides falls under the coastal states' government. Whilst, the federal government has the jurisdiction and management responsibility beyond the three nautical miles limits up to the outer edge of the Exclusive Economic Zone and continental shelf. Malaysia has initiated the marine cadastre system to register the rights, interests and ownership of spatially determined parcels in the context of the marine environment. Yet, there is no proper guideline and marine policy been made as there are many issues regarding intrinsic technical and legal aspects need to be resolved. As a governmental agency who is responsible in the nation's boundary limits survey and maps publication, Department of Survey and Mapping Malaysia has commenced a detailed national territorial sea baseline survey using vessel-based acoustic method in 1998. Thus, a total of 159 base points for baseline determination has been filed and eventually enacted under the Baseline of Maritime Zones Act 2006. Nonetheless, the baseline position at a particular time may never be the same and thus very soon become obsolete. In regard to this issue, it is essential to understand the issue of shifting marine baselines which occur either gradually or in sudden due to human activities or natural morphology alteration. The presence of satellite-derived bathymetry has brought in new revolution in hydrography. With proper calibration and bathymetry inversion model, accurate depths can be yielded from high-resolution multispectral imagery. Therefore, satellite-derived bathymetry approach here can be an efficient and repeatable way to derive the seabed topography along huge segments of coastline. The study suggests that satellite-derived bathymetry approach can be recognised as an aid in determining the baseline to support marine cadastre initiative.

An Aid in Determining the Territorial Sea Baseline for Marine Cadastre using Satellite-Derived Bathymetry (10122)
Kelvin Kang Wee Tang, Mohd Razali Mahmud (Malaysia), Alhaji Hussaini and Auwal Garba Abubakar (Nigeria)

FIG Working Week 2019

Geospatial information for a smarter life and environmental resilience

Hanoi, Vietnam, April 22–26, 2019